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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/746,647	12/21/2000	Peter William Cook	ROC920000163US1	9918

7590 11/04/2003

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EXAMINER

HARKNESS, CHARLES A

ART UNIT	PAPER NUMBER
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2183

DATE MAILED: 11/04/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/746,647

Applicant(s)

COOK ET AL.

Examiner

Charles A Harkness

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Papers Submitted

1. It is hereby acknowledged that the following papers have been received and placed of record in the file: Declaration as received on 02/23/01; Drawings as received on 02/26/01; CFR as received on 07/30/01; and Power of Attorney as received on 06/18/02.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
3. The applicant or their representatives are urged to review the specification and submit corrections for all mistakes of a grammatical, clerical, or typographical nature.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Janik et al, U.S. Patent Number 6,163,839 (herein referred to as Janik).
5. Referring to claims 1 and 8 Janik has taught a method for externally managing a data within an asynchronous pipeline (Janik column 1 lines 28-46 column 22 lines 22-26 column 24 lines 4-14), wherein said asynchronous pipeline includes a data path and a control path (Janik figure 1 references 12 and 14, the instruction pipe is the control path and the result pipe is the data path), said method comprising:

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assigning a data tag value to said data (Janik column 19 lines 4-10, column 2 lines 40-49);

sending said data tag into said control path when said data value is send into said data path such that said data tag value passes through said asynchronous pipeline in parallel with said data (Janik column 2 lines 40-49, column 13 lines 13-25, column 19 lines 4-52); and

comparing sad data tag value with a control tag value (Janik column 2 lines 40-49, column 13 lines 13-25, column 19 lines 4-52); and

in response to said data tag value matching said control tag value, permitting said data to pass to a next stage within said asynchronous pipeline (column 13 lines 13-25, column 19 lines 4-10; if they tags do not match between the instruction and the data, then they are not of the same thread and will not continue in the pipeline together).

6. Referring to claims 2 and 9 Janik has taught wherein said step of assigning a data tag value comprises associating an encoded binary sequence with said data (Janik column 2 lines 40-49, column 13 lines 13-25, column 19 lines 4-52; since the system is a digital computer, all of the values, including tags, would be represented in binary code, encoded to show which thread an instruction or value is apart of).

7. Referring to claims 3 and 10 Janik has taught wherein comparing step further comprises decoding said encoded binary sequence to identify said data tag value (Janik column 2 lines 40-49, column 13 lines 13-25, column 19 lines 4-52; decoding the tag simply be taking the tag from the data value for matching to see if its apart of the same thread).

8. Referring to claims 4 and 11 Janik has taught further comprising delivering said data tag value to a processor that is in communicative contact with said given stage (Janik column 2 lines

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40-49, column 13 lines 13-25, column 19 lines 4-52, column 24 lines 24-39; the tag stay with the same processor with all the stages).

9. Referring to claims 5 and 12 Janik has taught further comprising:

Assigning a control tag value with respect to said data tag value; and

Delivering said control tag value from said processor to said given stage (column 2 lines 40-49, column 13 lines 13-25, column 19 lines 4-52, column 3 lines 36-54; the tag would have to be located when there is a matching taking place, which would be distributed throughout the pipeline when using the distributed ROB).

10. Referring to claims 6 and 13 Janik has taught wherein said given stage includes a logic function for processing said data, said method further comprising:

Determining whether or not said control tag value matches aid data tag value; and

In response to determining that said control tag value matches said data tag value, delivering a control instruction from said processor to said logic function (column 2 lines 40-49, column 13 lines 13-25, column 19 lines 4-52, column 3 lines 36-54).

11. Referring to claims 7 and 14 Janik has taught wherein said assigning step further comprises:

Receiving said data at the front-end of said asynchronous pipeline; and

Associating said data tag value with said data within a memory device (Janik column 2 lines 40-49, column 13 lines 13-25, column 19 lines 4-52, column 3 lines 36-54; the tag and data value are stored in a register, which is known to be a memory; the tag is assigned as the value and instruction come into the ROB, which would be the beginning of the pipeline).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure as follows. Applicant is reminded that in amending in response to a rejection of claims, the patentable novelty must be clearly shown in view of the state of the art disclosed by the references cited and the objections made. Applicant must also show how the amendments avoid such references and objections. See 37 CFR 1.111(c).

Molnar et al, U.S. Patent Number 5,937,177 has taught a control structure for a high-speed asynchronous pipeline.

Sproull et al, "The Couterflow Pipeline Processor Architecture" has taught using local control to determine when an item in a pipeline should advance.

Hauck, Scott, "Asynchronous Design Methodologies: An Overview" has taught how to design an asynchronous pipeline.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles A Harkness whose telephone number is 703-305-7579. The examiner can normally be reached on 8:00 A.M. – 5:30 P.M. with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on 703-305-9712. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-7579.

Charles Allen Harkness

Patent Examiner

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October 30, 2003


EDDIE CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100